South Fork Trinity River Bridge
California State Highway 299
at South Fork of Trinity River
Salyer Vicinity
[Humboldt and] Trinity Counties
California

HAER No. CA-29

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPITIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, CA 94102

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HISTORIC AMERICAN ENGINEERING RECORD

SOUTH FORK TRINITY RIVER BRIDGE

HAER NO. CA-29

Location: Located at the crossing of State Highway 299 over the South Fork of the Trinity River at the Humboldt/Trinity County line; located between Willow Creek, Humboldt County, and Salyer, Trinity County, California.

UTM: 10.449400.4526385
Quad: Salyer, California, 7.5'

Date of Construction: 1930

Significance: The South Fork Trinity River Bridge is one of a very limited number of cantilever truss highway bridges in California. Best suited to specific terrain conditions such as deep canyons to be crossed by a single span, or where use of falsework was impractical, the type enjoyed brief popularity in California during the decade spanning the late 1920s to the late 1930s. With a high degree of integrity, and representing a type, period, and method of construction, the South Fork Trinity River Bridge was determined eligible for inclusion in the National Register of Historic Places on December 9, 1983, meeting Criterion C at the local level of significance.

Historian:

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DESCRIPTION

The South Fork Trinity River Bridge, Bridge Number 4-50, located on State Highway 299 at Post Mile 42.95 in Humboldt County, is described as a continuous steel deck truss with steel stringer approach spans. It is supported on reinforced concrete piers and bents on spread footings, and on seat abutments founded on steel piles and spread footings. Its six spans total 483 feet in length, 25.7 feet in width, and carry a two-lane, 24-foot roadway between timber railings. The structure was designed in 1929 by the Bridge Department of the California Division of Highways, and was built in 1930 by Mercer-Fraser Company, contractors, at a cost of $100,4B7.04.

HISTORY

By the late 1920s, the narrow suspension which carried then-Highway 20 across the Trinity River two miles west of Salyer had deteriorated to the point of being considered unsafe, as well as inadequate. Accordingly, the Bridge Department of the California Division of Highways prepared plans for its replacement. Because of terrain and foundation conditions at the site, the design called for a steel deck truss with cantilever arms. Height of the bridge would have made center span falsework prohibitively expensive, while foundation conditions were such that heavy abutments could not be supported safely. The selected design avoided both these problems.

On October 2, 1929 the Division of Highways awarded the contract for the bridge's construction to Mercer-Fraser Company of Eureka, this contractor having extensive experience erecting bridges for the State, for Humboldt County, and for the Northwestern Pacific Railroad. The contractor began excavation work on November 11, 1929. Because the new bridge was to be on new alignment, traffic continued to use the old suspension bridge during construction. The contractor's forces carried out excavation for piers, bents, and counterweights by hand, using picks, shovels, and wheelbarrows. Initial work proceeded only a short time until, on December 14, 1929, Mercer-Fraser stopped work for the winter.

When work resumed on March 19, 1930, concrete work began. Korbel Lumber Company at Korbel, California supplied lumber, which was trucked 41 miles to the construction site. Concrete Engineering Company of San Francisco supplied the reinforcing steel, shipping it by coastal steamer to Eureka and from there by truck for the final 56 miles to the site. Cement came from the Santa Cruz Portland Cement Company's plant at Davenport. The contractor located the mixer variously nearest the unit being poured, with concrete being wheeled to place in Sterling concrete buggies and placed via chutes and "elephant trunks." After the forms were

removed, the State's Resident Engineer termed the concrete work "very good."

American Bridge Company of Elmira, New York provided the structural steel for the bridge's superstructure. American Bridge obtained the material from Carnegie Steel Company of Pittsburg, Pennsylvania, and from Pencoyd Iron Works of Pencoyd, Pennsylvania. American Bridge shipped the steel by steamer to San Francisco, via the Panama Canal. At San Francisco the material was transshipped by rail to Arcata, from whence it was trucked the final 47 miles to the job site.

In erecting the superstructure, Mercer-Fraser utilized a 700-foot long highline to carry the steel to the point of placing. Placing was followed as closely as possible by riveting. The contractor utilized falsework only under the cantilever arms, using the cantilever method to erect the 240-foot main span. Following completion of the steel work, J.A. Mohr and Sons painted the structure. The contractor's forces completed all work on November 2I, I930.

PROJECT INFORMATION

The proposed project which would affect the South Fork Trinity River Bridge is the replacement of the bridge itself, with its subsequent removal.

Deterioration of the bridge truss has allowed excessive deflection which has caused severe cracking of the concrete deck. Earth movement at abutment number 1 has broken its backwall. Steel members are corroded. The timber rail does not meet current standards. The long, narrow bridge is inadequate to accommodate pedestrians and bicyclists at the same time that vehicles are on the structure.

This portion of State Highway 299 is included in the State freeway and expressway system, and in the State "SHELL" (State Highway Extra Legal Load) System. Route 299 is the northernmost east-west through route in California connecting the Central Valley with the north coastal regions. The route is functionally classified as a rural principal arterial. It is heavily used by the commercial trucking industry as there is no rail service along this corridor. The bridge's condition severely restricts weights of permit overloads which can be carried on this corridor.

The new structure will be built upstream but not parallel to the existing bridge. This alignment was specifically developed in coordination with the Native American Heritage Commission and the

Hoopa Valley Business Council to avoid impacts to extensive archaeological resources in the immediate vicinity, including burials. In order to aviod the archaeological resources, the westerly bridge end will be about 180 feet upstream, and the easterly bridge end will be as close to the existing bridge as construction clearances will allow (about five feet).

The new structure, which will accommodate bicyclists and pedestrians, will have a 36-foot wide deck to provide two 12-foot traffic lanes and six-foot shoulders. Length will be about 460 feet overall. Approaches of about 1,400 feet in length on the west end and 690 feet on the east will provide a 32-foot, all paved roadway section allowing two 12-foot lanes and four-foot shoulders.

Construction costs were estimated for two different structures for the river crossing. Both are cast-in-place prestressed concrete box girder bridges. One is a conventional design with vertical piers, while the other is a more aesthetically pleasing bridge with varying structure depth and inclined piers. Estimated costs are $1,585,000 for the conventional structure and $1,610,000 for the more aesthetic design, which is the preferred alternative given the highly scenic project area.

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